ORDER NO. MTNC020307A1
B5

Service Manual

Simplified

Color Television

Simplified Manual
(NA7DM)

Quasar

Models	Chassis
SP-2725F	**SC363**
SP-2725UF	**SC363**

This simplified service manual is issued to add listed models to the simplified service manual, order No. **MTNC020101A1 (CT-27G7F);** Unique schematics, settings and a complete parts list are included in this simplified service manual**.** Please file and use this simplified service manual together with the simplified service manual, order No. **MTNC020101A1 (CT-27G7F)** and main service manual, order No. **MTNC010306C1 (CT-27G6E).**

"**WARNING!** This Service Manual is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. **Products powered by electricity should be serviced or repaired only by experienced professional technicians.** Any attempt to service or repair the product or products dealt with in this Service Manual by anyone else could result in serious injury or death."

The service technician is required to read and follow the "**Safety Precautions**" and "**Important Safety Notice**" in this Manual.

Quasar®

Important Safety Notice

Special components are used in this television set which are important for safety. These parts are identified on the schematic diagram by the symbol ⚠ and printed in **BOLD TYPE** on the replacement part list. It is essential that these critical parts are replaced with the manufacturer's specified replacement part to prevent X-ray radiation, shock, fire or other hazards. Do not modify the original design without the manufacturer's permission.

Safety Precautions

General Guidelines

An **Isolation Transformer** should always be used during the servicing of a receiver whose chassis is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect the receiver from being damaged by accidental shorting that may occur during servicing.

When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)

Always replace protective devices, such as fishpaper, isolation resistors and capacitors, and shields after servicing the receiver. Use only manufacturer's recommended rating for fuses, circuits breakers, etc.

High potentials are present when this receiver is operating. Operation of the receiver without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautions when servicing high-voltage equipment.

Extreme care should be practiced when **handling the picture tube**. Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, use safety goggles and heavy gloves for protection. **Discharge the picture tube** by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a well insulated wire or use a grounding probe.

Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to x-ray radiation.

The **Test Picture Tube** used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against x-ray radiation as well as implosion. The magnetic shield limits the x-ray radiation around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling **50kV** without causing x-ray radiation.

Before returning a serviced Receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. **Do not use a line isolation transformer when testing.**

Leakage Current Cold Check

Unplug the AC cord and connect a jumper between the two plug prongs.

Measure the resistance between the jumpered AC plug and expose metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed metallic part has a return path to the chassis, the reading should be between 240kΩ and 5.2MΩ. If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.

Leakage Current Hot Check (Fig. 1)

Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check.

Connect a 1.5kΩ 10 watt resistor in parallel with a 0.15µF capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other exposed metallic parts.

Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson model 229, Sencore Model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 0.5 milliamp. If any measurement is out of the specified limits, there is a possibility of a shock hazard and the receiver must be repaired and rechecked before it is returned to the customer.

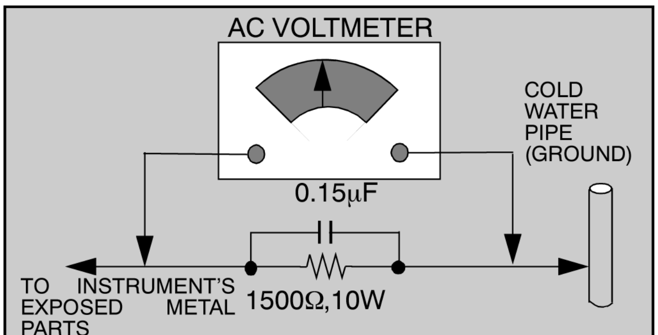


Figure 1. Hot Check Circuit

X-ray Radiation

WARNING: The potential source of x-ray radiation in the receiver is in the High Voltage section and the picture tube. Refer to "X-ray Protection Circuit Check & Adjustments" on page 6 to confirm HHS voltage.

High Voltage (CRT Anode)

Set the **brightness, picture, sharpness** and **color** controls to minimum (to obtain dark image). Measure the High Voltage. The high voltage should be **29.25kV ± 1.25kV**. If the upper limit is out of tolerance, immediate service and correction is required.

Note: *It is important to use an accurate, calibrated high voltage meter.*

About lead free solder (PbF)

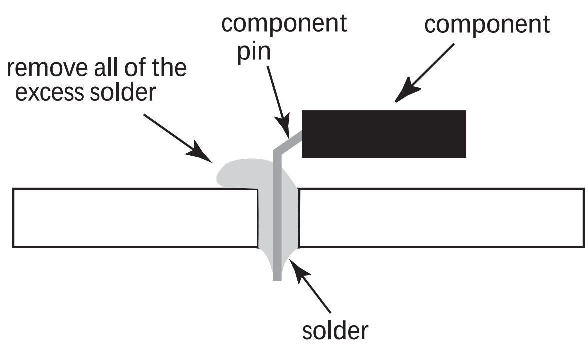
Note: Lead is listed as (Pb) in the periodic table of elements.
In the information below, Pb will refer to Lead solder, and PbF will refer to Lead Free Solder.
The Lead Free Solder used in our manufacturing process and discussed below is (Sn+Ag+Cu).
That is Tin (Sn), Silver (Ag) and (Cu) although other types are available.

This model uses Pb Free solder in it's manufacture due to environmental conservation issues. For service and repair work, we'd suggest the use of Pb free solder as well, although Pb solder may be used.

PCBs manufactured using lead free solder will have the PbF within a leaf Symbol (PbF) stamped on the back of PCB.

Caution

- Pb free solder has a higher melting point than standard solder. Typically the melting point is 50 ~ 70 °F (30 ~ 40 °C) higher. Please use a high temperature soldering iron and set it to 700 ± 20 °F (370 ± 10 °C).
- Pb free solder will tend to splash when heated too high (about 1100 °F or 600 °C).
  If you must use Pb solder, please completely remove all of the Pb free solder on the pins or solder area before applying Pb solder. If this is not practical, be sure to heat the Pb free solder until it melts, before applying Pb solder.
- After applying PbF solder to double layered boards, please check the component side for excess solder which may flow onto the opposite side. (see figure below)



slice view

Suggested Pb free solder

There are several kinds of Pb free solder available for purchase. This product uses Sn+Ag+Cu (tin, silver, copper) solder. However, Sn+Cu (tin, copper), Sn+Zn+Bi (tin, zinc, bismuth) solder can also be used.

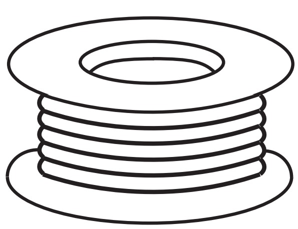
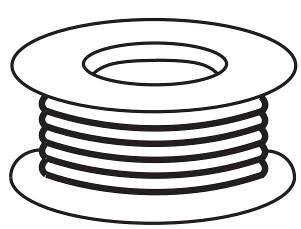
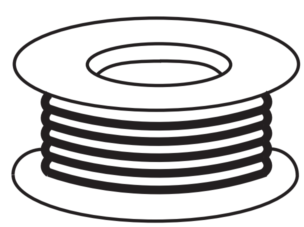
0.3mm X 100g	0.6mm X 100g	1.0mm X 100g
		

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Service Notes

Note: *Some components may be affixed with glue. Be careful not to break or damage foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.*

Leadless Chip Component

(surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor board solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.

Chip resistor have a three digit numerical resistance code - 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6kΩ resistor, 0 = 0Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

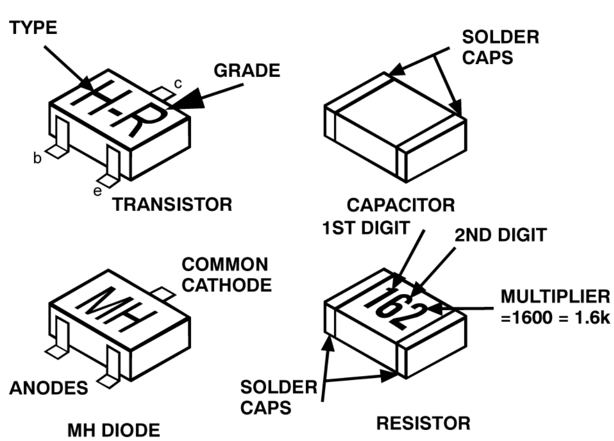
Component Removal

1. Use solder wick to remove solder from component end caps or terminal.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.

Chip Components

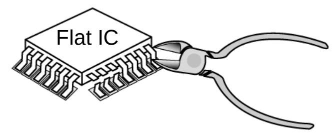


How to Replace Flat-IC

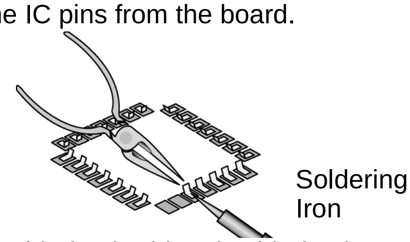
- Required Tools -

- Soldering iron
- Needle nose pliers
- Wire cutters (sharp & small)
- De-solder braids
- Magnifier

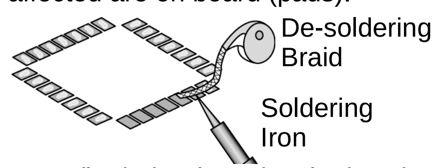
1. Cut the pins of a defective IC with wire cutters. Remove IC from board. If IC is glued to the board, heat the IC and release the IC. See Note above.



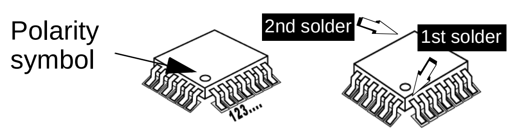
2. Using soldering iron and needle nose pliers remove the IC pins from the board.



3. Using de-soldering braid and soldering iron remove solder from affected are on board (pads).

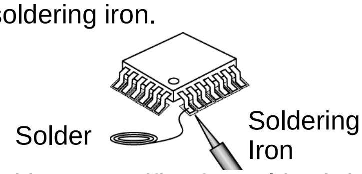


4. Position the new flat-ic in place (apply the pins of the flat-ic to the soldering pads where the pins need to be soldered). Determine the positions of the soldering pads and pins by correctly aligning the polarity symbol. Solder pin #1 first, align the IC.

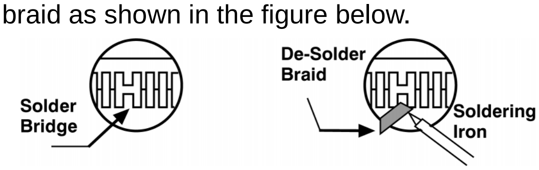


Solder the pin opposite to pin #1. This will assist positioning the IC.

5. Solder all pins to the soldering pads using a fine tipped soldering iron.



6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.



IMPORTANT: To protect against possible damage to the solid state devices due to arcing or static discharge, make certain that all ground wires and CRT DAG wire are securely connected.

CAUTION: The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the receiver to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground (⏚) or (⏚) when servicing, or incorrect voltages will be measured.

WARNING: This receiver has been designed to meet or exceed applicable safety and x-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to x-ray radiation and shock and fire hazard, parts indicated with the symbol ⚠ on the schematic must be replaced with identical parts. Order parts from the manufacturer’s parts center using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.

For optimum performance and reliability, all other parts should be replaced with components of identical specification.

X-ray Protection Circuit Check & Adjustments

This test must be performed as final check before the receiver is returned to the customer. If voltages are out of tolerance, immediate service and correction is required to insure safe operation and to prevent the possibility of premature component failure.

Equipment:

1. Isolation transformer.
2. High voltage meter.
3. Short jumper.
4. Jumper diode (same as D823, PN S3L60P154004). diode should be rated a minimum of 150V.

Procedure:

1. Connect the receiver to an isolation transformer. turn receiver ON.
2. Apply a monoscope pattern.
3. In service mode (see service mode section in this manual) select register C0B.
4. Measure TP5 (located near the tuner). Compare the measured value to the left column of the table below. Set C0B with value from the right column corresponding to the measured level at TP5. Example, if the measured level at TP5 is 1.03V, set C0B to 03.

TP5 MEASUREMENT	SET C0B TO (HEX)
0 ~ 0.93V	00
0.93 ~ 0.97V	01
0.97 ~ 1.01V	02
1.01 ~ 1.05V	03
1.05 ~ 1.09V	04
1.09 ~ 1.13V	05
1.13 ~ 1.17V	06
1.17 ~ 1.21V	07

5. Exit service mode and shut the TV OFF.
6. Connect the short jumper between TPD16 and TPD17.
7. Connect the jumper diode between TPD14 and TPD15 (cathode connected to TPD14, anode connected to TPD15).
8. Apply 75VAC to the input of the isolation transformer.
9. Turn receiver ON.
10. Set PICTURE and BRIGHTNESS to minimum.
11. Slowly increase the voltage at the input of the isolation transformer and confirm HHS voltage measure **35.0KV** when the receiver starts to go out of sync.
12. Turn receiver OFF and remove jumper & diode.

Receiver Feature Table

FEATURE / MODEL	ALL MODELS
Chassis	SC363
No. of channels	181
Menu language	Eng/Span/Fr
Closed Caption	X
V-Chip (USA/CANADA)	X
75 Ω input	X
Remote model number	EUR511514
Picture tube	M68LGL061X
Panablack tube	X
Comb filter	2 Dig
V/A norm	V
MTS/SAP/DBX	X
AI Sound	X
Built-in audio power	1.5W x 2 (10%)
Number of speakers	2
A/V in (rear/front)	1 (1 / 0)
S-VHS input (rear/front)	1/0
Dimensions (WxDxH) mm / in	665.2 x 545 x 594.8 26.2 x 21.5 x 23.4
Weight (kg/lbs)	35 / 77.2
Power source (V/Hz)	120 / 60
Anode voltage	29.25kV ± 1.25kV
Video input jack	1V_{p-p} 75Ω, phono jack
Audio input jack	500mV RMS 47kΩ
A-Board TNP2AH040	BA*
C-Board TNP2AA106	AG*

Table 1. **Receiver Features**

Specifications are subject to change without notice or obligation.
Dimensions and weights are approximate.

* **_Note:_** *When ordering a replacement board assembly, append an “S” next to the board number.*
Example: to order the A-Board for CT-2725F, the replacement board is **TNP2AH040BAS**.

REPLACEMENT PARTS LIST

Models: SP-2725F, SP-2725UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
	CAPACITORS	
C001	**TCJ2VF1H103Z**	**CAP,C .01UF-Z-50V**
C002	TCJ2VB1H471K	CAP,C 470PF-K-50V
C003	ECA1HM4R7B	CAP,E 4.7UF-50V
C004	TCJ2VC1H150J	CAP,C 15PF-J-50V
C005	TCJ2VC1H150J	CAP,C 15PF-J-50V
C008	TCJ2VF1H104Z	CAP,C .1UF-Z-50V
C009	ECA1AM470B	CAP,E 47UF-10V
C010	TCJ2VF1H104Z	CAP,C .1UF-Z-50V
C011	ECA1AM101B	CAP,E 100UF-10V
C015	ECJ2VB1C224K	CAP,C .22UF-K-16V
C016	TCJ2VC1H101J	CAP,C 100PF-J-50V
C017	TCJ2VB1C104K	CAP,C .1UF-K-16V
C018	TCJ2VC1H151J	CAP,C 150PF-J-50V
C020	TCJ2VB1C104K	CAP,C .1UF-K-16V
C022	TCJ2VC1H101J	CAP,C 100PF-J-50V
C023	TCJ2VC1H151J	CAP,C 150PF-J-50V
C024	ECA1AM470B	CAP,E 47UF-10V
C025	TCJ2VB1C104K	CAP,C .1UF-K-16V
C026	TCJ2VB1C104K	CAP,C .1UF-K-16V
C027	TCJ2VF1H104Z	CAP,C .1UF-Z-50V
C028	TCJ2VB1C104K	CAP,C .1UF-K-16V
C029	ECQB1H333JF3	CAP,P .033UF-J-50V
C031	ECA1HMR22B	CAP,E .22UF-50V
C032	ECA1AM470B	CAP,E 47UF-10V
C033	TCJ2VC1H390J	CAP,C 39PF-J-50V
C034	TCJ2VF1H103Z	CAP,C .01UF-Z-50V
C035	ECA1HM010B	CAP,E 1UF-50V
C036	TCJ2VF1H103Z	CAP,C .01UF-Z-50V
C037	ECA1HM0R1B	CAP,E 0.1UF/50V
C038	ECA1AM470B	CAP,E 47UF-10V
C040	ECA1AM470B	CAP,E 47UF-10V
C041	ECA1HM2R2B	CAP,E 2.2UF-50V
C042	TCJ2VF1H104Z	CAP,C .1UF-Z-50V
C043	ECA1AM470B	CAP,E 47UF-10V
C044	TCJ2VC1H471J	CAP,C 470PF-J-50V
C045	ECA1HM0R1B	CAP,E 0.1UF/50V
C046	TCJ2VB1C104K	CAP,C .1UF-K-16V
C047	TCJ2VC1H220J	CAP,C 22PF-J-50V
C048	TCJ2VC1H220J	CAP,C 22PF-J-50V
C050	ECA1AM101B	CAP,E 100UF-10V
C051	TCJ2VF1H104Z	CAP,C .1UF-Z-50V
C055	TCJ2VC1H560J	CAP,C 56PF-J-50V
C103	ECA0JM331B	CAP,E 330UF-6.3V
C104	TCJ2VF1H103Z	CAP,C .01UF-Z-50V
C105	ECA0JM101B	CAP,E 100UF-6.3V
C350	ECA1CM101B	CAP,E 100UF/16V
C351	TCJ2VB1H391K	CAP,C 390PF-K-50V
C352	TCJ2VB1H391K	CAP,C 390PF-K-50V
C353	TCJ2VB1H471K	CAP,C 470PF-K-50V
C354	ECKW3D102KBN	CAP,C .001UF-K-2KVDC
C357	EEANA1E1R0B	CAP,E 1.0UF-25V
C361	TCJ2VC1H151J	CAP,C 150PF-J-50V
C362	TCJ2VC1H151J	CAP,C 150PF-J-50V
C363	TCJ2VC1H151J	CAP,C 150PF-J-50V
C451	ECA1CHG470B	CAP,E 47UF-16V
C452	ECSF1EE105VB	CAP,E 1.0UF-25V
C453	ECEA1HFS010B	CAP,E 1UF-50V
C454	ECA1EM102E	CAP,E 1000UF-25V
C455	ECA1VHG101B	CAP,E 100UF-35V
C456	ECQB1H103JF3	CAP,P .01UF-J-50V
C459	ECA1VHG471B	CAP,E 470UF-35V
C462	ECA1HM4R7B	CAP,E 4.7UF-50V
C502	TCJ2VC1H471J	CAP,C 470PF-J-50V
C503	TCJ2VB1C104K	CAP,C .1UF-K-16V
C504	TCJ2VB1C104K	CAP,C .1UF-K-16V
C510	ECCR2H100D5	CAP,C 10PF-D-500V
C511	ECKR2H821KB5	CAP,C 820PF-K-500V
C512	ECKR2H101KB5	CAP,C 100UF-K-500V
C531	**ECA1EM220B**	**CAP,E 22UF-25V**
C551	**ECA1VM331B**	**CAP,E 330UF-35V**
C554	ECKR2H561KB5	CAP,C 560PF-K-500V
C555	**ECA2EM220E**	**CAP,E 22UF-250V**
C556	**ECA1CM471B**	**CAP,E 470UF-16V**
C557	ECKR2H102KB5	CAP,C 1000PF-K-500V
C560	**ECEA1HN010UB**	**CAP,E 1UF/50V**
C561	ECKR2H561KB5	CAP,C 560PF-K-500V
C563	**ECWH12H822JS**	**CAP,P .0082UF-J-1.2KV**
C564	**ECWH12H562JS**	**CAP,P .0056UF-J-1.2KV**
C565	**ECKW3D181JBP**	**CAP,C 180PF-J-2KV**
C566	**ECKW3D181JBP**	**CAP,C 180PF-J-2KV**
C568	**ECWF2274JBB**	**CAP,M .27UF-J-200V**
C569	**ECWF2474JBB**	**CAP,M .24UF-J-200V**
C570	ECA1CM222E	CAP,E 2200UF-16V
C571	ECA1EM220B	CAP,E 22UF-25V
C572	ECA1CM100B	CAP,E 10UF-16V
C573	ECA1CM101B	CAP,E 100UF/16V
C575	ECA0JM222B	CAP,E 2200UF-6.3V
C577	ECA1CM101B	CAP,E 100UF/16V
C578	ECA0JM332B	CAP,E 3300PF-6.3V
C579	TCJ2VF1H103Z	CAP,C .01UF-Z-50V
C580	ECKR2H152KB5	CAP,C 1500PF-K-500V
C605	TCJ2VF1H103Z	CAP,C .01UF-Z-50V
C606	ECA0JM221B	CAP,E 220UF-6.3V
C801	**ECKWAE472ZED**	**CAP,C 4700PF-Z-500V**
C802	**ECKWAE472ZED**	**CAP,C 4700PF-Z-500V**
C803	**ECKWAE472ZED**	**CAP,C 4700PF-Z-500V**
C805	**EC0S2DA331BB**	**CAP,E 330UF/200V**
C806	ECQM4103KZW	CAP,P .01UF-K-400V
C807	ECKR3A821KBP	CAP,C 820PF-K-1KV

REPLACEMENT PARTS LIST

Models: SP-2725F, SP-2725UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C808	ECA1VM101B	CAP,E 100UF-35V
C809	ECKR1H101KB5	CAP,C 100PF-K-50V
C810	ECKR1H471KB5	CAP,C 470PF-K-50V
C812	**ECQU2A224MVA**	**CAP,P .22UF-M-250VAC**
C813	**ECQU2A153MVA**	**CAP,P .015UF-M-250VAC**
C814	**ECQU2A153MVA**	**CAP,P .015UF-M-250VAC**
C820	ECA1CM101B	CAP,E 100UF/16V
C821	TCJ2VF1H103Z	CAP,C .01UF-Z-50V
C822	ECKR3A221KBP	CAP,C 220PF-K-1KV
C823	**ECA1VM471E**	**CAP,E 470UF-35V**
C824	ECKR3A471KBP	CAP,C 470PF-K-1KV
C825	**EEUMG2C221S**	**CAP,E 220UF-160V**
C826	ECKR3A471KBP	CAP,C 470PF-K-1KV
C827	ECA1CM221B	CAP,E 10UF-16V
C828	**ECA160V33UE**	**CAP,E 33UF/160V**
C2201	ECA1HM4R7B	CAP,E 4.7UF-50V
C2202	ECA1HM2R2B	CAP,E 2.2UF-50V
C2203	ECA1HM4R7B	CAP,E 4.7UF-50V
C2204	AP106K016CAE	CAP,T 10UF/16V
C2205	ECA1HMR33B	CAP,E .33UF-50V
C2206	ECQB1H223JF3	CAP,P .022UF-J-50V
C2207	AP335K016CAE	CAP,T 3.3UF/16V
C2208	TCJ2VB1C104K	CAP,C .1UF-K-16V
C2209	TCJ2VB1C104K	CAP,C .1UF-K-16V
C2210	TCJ2VB1C104K	CAP,C .1UF-K-16V
C2212	ECQB1H473JF3	CAP,P .047UF-J-50V
C2213	ECA1HMR47B	CAP,E .47UF-50V
C2214	ECA1AM101B	CAP,E 100UF-10V
C2215	EEANA1E100B	CAP,E 10UF-25V
C2216	TCJ2VC1H100D	CAP,C 10PF-J-50V
C2301	ECA1EM102E	CAP,E 1000UF-25V
C2302	ECEA1HN010UB	CAP,E 1UF/50V
C2303	ECA1EM101B	CAP,E 100UF-25V
C2304	ECA1CM100B	CAP,E 10UF-16V
C2307	ECA1CM102B	CAP,E 1000UF/16V
C2311	ECA1EM102E	CAP,E 1000UF-25V
C2312	ECEA1HN010UB	CAP,E 1UF/50V
C2313	ECA1EM101B	CAP,E 100UF-25V
C2314	ECA1CM100B	CAP,E 10UF-16V
C2317	ECA1CM102B	CAP,E 1000UF/16V
C2320	ECA1CM100B	CAP,E 10UF-16V
C2330	ECA1CM100B	CAP,E 10UF-16V
C2350	ECA1HM4R7B	CAP,E 4.7UF-50V
C3001	ECA1HM0R1B	CAP,E 0.1UF/50V
C3012	ECA1HM010B	CAP,E 1UF-50V
C3018	ECA1HM010B	CAP,E 1UF-50V
C3050	TCJ2VF1H103Z	CAP,C .01UF-Z-50V
C3051	TCJ2VF1H103Z	CAP,C .01UF-Z-50V
	DIODES	
D002	MA165TA5VT	DIODE, SWITCHING
D006	MA4330HTA	DIODE
D052	MA4068MTA	DIODE, ZENER
D053	MA4056MTA	DIODE
D055	MA4056MTA	DIODE
D451	ERA15-01V3	DIODE, RECTIFIER
D452	MA4047MTA	DIODE
D453	MA165TA5VT	DIODE, SWITCHING
D454	MA165TA5VT	DIODE, SWITCHING
D502	MA4047MTA	DIODE
D531	**AS01V0**	**DIODE**
D551	**D1NL20UV70**	**DIODE**
D554	**AU02V0**	**DIODE**
D558	RS3FS	DIODE
D559	BYD33G-113	DIODE
D561	**AU02V0**	**DIODE**
D571	MA165TA5VT	DIODE, SWITCHING
D606	MA165TA5VT	DIODE, SWITCHING
D607	MA152KTX	DIODE
D608	MA152KTX	DIODE
D609	MA152KTX	DIODE
D801	**D3SBA60-4103**	**DIODE**
D806	**TAP4GA0006**	**DIODE**
D808	SARS01V1	DIODE
D809	AG01V0	DIODE
D810	AG01V0	DIODE
D811	AG01V0	DIODE
D812	**MA4068MTA**	**DIODE, ZENER**
D820	MA165TA5VT	DIODE, SWITCHING
D821	MA4047HTA	DIODE
D822	RN1ZLF-B1	DIODE
D823	**S3L60P154004**	**DIODE**
D824	D1NL20UV70	DIODE
D2350	MA4068MTA	DIODE, ZENER
D2351	MA165TA5VT	DIODE, SWITCHING
D2352	MA165TA5VT	DIODE, SWITCHING
D2353	MA165TA5VT	DIODE, SWITCHING
D2354	MA4091MTA	DIODE
D3001	MA3110MTX	DIODE, ZENER
D3003	MA3110MTX	DIODE, ZENER
D3004	MA3110MTX	DIODE, ZENER
D3005	MA3110MTX	DIODE, ZENER
D3006	MA3110MTX	DIODE, ZENER
	FUSES	
F801	**XBA2A00101**	**FUSE 6.3A 125V**
	INTEGRATED CIRCUIT	
IC001	**M65580MAP103**	**MPU/VCJ**
IC002	TVR2AJ125	EEPROM
IC003	PIC-37042SR	REMOTE SENSOR
IC005	PQ1X331M2ZP	3.3 REGULATOR
IC006	MN1280R	RESET

REPLACEMENT PARTS LIST

Models: SP-2725F, SP-2725UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
IC050	TC74HC4066AL	HALF TONE (OSD)
IC451	**LA7838**	**V. OUT**
IC551	AN78M09LB	9V REGULATOR
IC552	**AN78M05LB**	**PLUS 5V AVR**
IC553	**AN78M05LB**	**PLUS 5V AVR**
IC801	**STRG5624A**	**VCO (POWER SUPPLY)**
IC2201	AN5829S-E1V	MTS, S-AGC
IC2301	AN17800A	AUDIO OUT AMP
IC2302	AN17800A	AUDIO OUT AMP
COILS		
L001	EXCELSA35T	FERRITE BEAD
L003	TLUABTA2R2K	COIL, PEAKING 2.2UH
L004	TLUABTA2R2K	COIL, PEAKING 2.2UH
L005	EXCELDR35V	FERRITE BEAD
L006	EXCELSA24T	FERRITE BEAD
L007	EXCELDR35V	FERRITE BEAD
L008	TLUABTA470K	COIL, PEAKING 47UH
L009	EXCELSA35V	FERRITE BEAD
L010	ELESN330JA	COIL, PEAKING 33UH
L011	ELESN330JA	COIL, PEAKING 33UH
L013	EXCELDR35V	FERRITE BEAD
L014	ELESN180KA	COIL, PEAKING 18UH
L016	EXCELSA35V	FERRITE BEAD
L017	TLUABTA100K	COIL, PEAKING 10UH
L018	TLUABTA150K	COIL, PEAKING 15UH
L019	EXCELDR35V	FERRITE BEAD
L090	EXCELSA24T	FERRITE BEAD
L104	TLUABTA2R2K	COIL, PEAKING 2.2UH
L108	EXCELSA35V	FERRITE BEAD
L245	EXCELSA35V	FERRITE BEAD
L250	EXCELSA35V	FERRITE BEAD
L306	TLUABTA2R2K	COIL, PEAKING 2.2UH
L325	EXCELSA35V	FERRITE BEAD
L351	TLTABT101K	COIL, PEAKING
L403	TLUABTA2R2K	COIL, PEAKING 2.2UH
L416	EXCELSA39V	FERRITE BEAD
L551	**ELH5L7103**	**COIL**
L801	**ELF20N020A**	**COIL, 2UH**
L802	TALL08T470KA	LINE FILTER
L803	TALL08T680KA	LINE FILTER
L805	TALL08T220KA	TRANSFORMER, LINE FILTER
L2305	EXCELSA35V	FERRITE BEAD
L2350	ELESN4R7JA	COIL, PEAKING 4.7UH
TRANSISTORS		
Q001	2SD601ARTX	TRANSISTOR
Q006	2SB709ARTX	TRANSISTOR
Q007	2SB709ARTX	TRANSISTOR
Q008	2SB709ARTX	TRANSISTOR
Q009	2SC1473A	TRANSISTOR
Q050	2SB709ARTX	TRANSISTOR

REF NO.	PART NO.	DESCRIPTION
Q051	2SB709ARTX	TRANSISTOR
Q052	2SB709ARTX	TRANSISTOR
Q053	2SD601ARTX	TRANSISTOR
Q054	2SD601ARTX	TRANSISTOR
Q055	2SD601ARTX	TRANSISTOR
Q090	2SB709ARTX	TRANSISTOR
Q092	2SB709ARTX	TRANSISTOR
Q351	2SC3063RL	TRANSISTOR
Q352	2SC3063RL	TRANSISTOR
Q353	2SC3063RL	TRANSISTOR
Q354	2SD601ARTX	TRANSISTOR
Q355	2SD601ARTX	TRANSISTOR
Q356	2SD601ARTX	TRANSISTOR
Q451	2SD601ARTX	TRANSISTOR
Q452	2SD601ARTX	TRANSISTOR
Q453	2SD601ARTX	TRANSISTOR
Q501	2SC4212HLB	TRANSISTOR
Q505	2SD601ARTX	TRANSISTOR
Q520	2SD601ARTX	TRANSISTOR
Q551	**2SC5339LBMA1**	**TRANSISTOR**
Q605	2SB709ARTX	TRANSISTOR
Q606	2SD601ARTX	TRANSISTOR
Q820	2SA1767QTA	TRANSISTOR
Q830	2SB1011QRL	TRANSISTOR
Q2350	2SB709ARTX	TRANSISTOR
RELAYS		
RL801	**TSEH0005**	**RELAY**
RESISTORS		
R001	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R003	ERJ6GEYJ105V	RES,M 1M-J-1/10W
R004	ERJ6GEYJ562V	RES,M 5.6K-J-1/10W
R006	ERDS2TJ101T	RES,C 100-J-1/4W
R007	ERJ6GEYJ471V	RES,M 470-J-1/10W
R008	ERJ6GEYJ471V	RES,M 470-J-1/10W
R009	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W
R010	ERJ6GEYJ682V	RES,M 6.8K-J-1/10W
R011	ERJ6GEYJ682V	RES,M 6.8K-J-1/10W
R012	ERJ6GEYJ473V	RES,M 47K-J-1/10W
R013	ERJ6GEYJ202V	RES,M 2K-J-1/10W
R014	ERJ6GEYJ221V	RES,M 220-J-1/10W
R015	ERJ6GEYJ221V	RES,M 220-J-1/10W
R016	ERJ6GEYJ221V	RES,M 220-J-1/10W
R017	ERJ6GEYJ681V	RES,M 680-J-1/10W
R018	ERJ6GEYJ681V	RES,M 680-J-1/10W
R019	ERJ6GEYJ681V	RES,M 680-J-1/10W
R021	ERJ6GEYJ101V	RES,M 100-J-1/10W
R022	ERJ6GEYJ101V	RES,M 100-J-1/10W
R023	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R024	ERJ6GEYJ153V	RES,M 15K-J-1/10W
R028	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W

REPLACEMENT PARTS LIST

Models: SP-2725F, SP-2725UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R029	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W
R032	ERJ6ENF1002V	RES,M 10K-F-1/10W
R033	ERJ6GEYJ222V	RES,M 2.2K-J-1/10W
R034	ERJ6GEYJ222V	RES,M 2.2K-J-1/10W
R035	ERJ6GEYJ332V	RES,M 3.3K-J-1/10W
R036	ERJ6GEYJ562V	RES,M 5.6K-J-1/10W
R037	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R038	ERJ6GEYJ223V	RES,M 22K-J-1/10W
R039	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R040	ERJ6GEYJ223V	RES,M 22K-J-1/10W
R041	ERJ6GEYJ153V	RES,M 15K-J-1/10W
R042	ERJ6GEYJ392V	RES,M 3.9K-J-1/10W
R044	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R045	ERJ6GEYJ101V	RES,M 100-J-1/10W
R046	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R062	ERJ6GEYJ122V	RES,M 1.2K-J-1/10W
R063	ERJ6GEYJ122V	RES,M 1.2K-J-1/10W
R064	ERJ6GEYJ122V	RES,M 1.2K-J-1/10W
R065	ERJ6GEYJ272V	RES,M 2.7K-J-1/10W
R066	ERJ6GEYJ272V	RES,M 2.7K-J-1/10W
R067	ERJ6GEYJ272V	RES,M 2.7K-J-1/10W
R068	ERJ6GEYJ182V	RES,M 1.8K-J-1/10W
R069	ERJ6GEYJ682V	RES,M 6.8K-J-1/10W
R070	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R071	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R072	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R078	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R081	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R090	ERJ6GEYJ471V	RES,M 470-J-1/10W
R091	ERJ6GEYJ185V	RES,M 1.8MEG-J-1/10W
R092	ERJ6GEYJ473V	RES,M 47K-J-1/10W
R093	ERJ6GEYJ331V	RES,M 330-J-1/10W
R202	ERJ6GEYJ751V	RES,M 750-J-1/10W
R351	ERG2FJ123H	RES,M 12K-J-2W
R352	ERG2FJ123H	RES,M 12K-J-2W
R353	ERG2FJ123H	RES,M 12K-J-2W
R354	ERDS1TJ272T	RES,C 2.7K-J-1/2W
R355	ERDS1TJ272T	RES,C 2.7K-J-1/2W
R356	ERDS1TJ272T	RES,C 2.7K-J-1/2W
R357	ERJ6ENF5100V	RES,M 510-F-1/10W
R358	ERJ6ENF5100V	RES,M 510-F-1/10W
R359	ERJ6ENF5100V	RES,M 510-F-1/10W
R360	ERJ6ENF4700V	RES,M 470-F-1/10W
R361	ERJ6ENF4700V	RES,M 470-F-1/10W
R362	ERJ6ENF4700V	RES,M 470-F-1/10W
R363	ERJ6GEYJ101V	RES,M 100-J-1/10W
R364	ERJ6GEYJ101V	RES,M 100-J-1/10W
R365	ERJ6GEYJ101V	RES,M 100-J-1/10W
R381	ERJ6GEYJ101V	RES,M 100-J-1/10W
R382	ERJ6GEYJ101V	RES,M 100-J-1/10W

REF NO.	PART NO.	DESCRIPTION
R383	ERJ6GEYJ101V	RES,M 100-J-1/10W
R384	ERJ6ENF2701V	RES,M 2.7K-F-1/10W
R385	ERJ6ENF4421V	RES,M 4.42K-F-1/10W
R386	ERJ6ENF1201V	RES,M 1.2K-F-1/10W
R387	ERJ6ENF2701V	RES,M 2.7K-F-1/10W
R388	ERJ6ENF4421V	RES,M 4.42K-F-1/10W
R389	ERJ6ENF1201V	RES,M 1.2K-F-1/10W
R390	ERJ6ENF2701V	RES,M 2.7K-F-1/10W
R391	ERJ6ENF4421V	RES,M 4.42K-F-1/10W
R392	ERJ6ENF1201V	RES,M 1.2K-F-1/10W
R451	ERDS1FJ1R0P	RES,C 1.0-J-1/2W
R454	ERJ6GEYJ473V	RES,M 47K-J-1/10W
R455	ERJ6GEYJ183V	RES,M 18K-J-1/10W
R456	ERJ6GEYJ223V	RES,M 22K-J-1/10W
R457	ERJ6GEYJ182V	RES,M 1.8K-J-1/10W
R458	ERJ6GEYJ333V	RES,M 33K-J-1/10W
R459	ERJ6GEYJ683V	RES,M 68K-J-1/10W
R460	ERDS2TJ102T	RES,C 1K-J-1/4W
R462	ERJ6GEYJ473V	RES,M 47K-J-1/10W
R463	ERJ6GEYJ473V	RES,M 47K-J-1/10W
R465	ERJ6GEYJ183V	RES,M 18K-J-1/10W
R466	ERJ6GEYJ683V	RES,M 68K-J-1/10W
R467	ERJ6GEYJ104V	RES,M 100K-J-1/10W
R468	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R469	ERJ6GEYJ220V	RES,M 22-J-1/10W
R471	ERJ6GEYJ223V	RES,M 22K-J-1/10W
R472	ERJ6GEYJ473V	RES,M 47K-J-1/10W
R475	ERJ6GEYJ471V	RES,M 470-J-1/10W
R502	ERJ6GEYJ562V	RES,M 5.6K-J-1/10W
R504	ERDS2TJ681T	RES,C 680-J-1/4W
R505	ERJ6GEYJ222V	RES,M 2.2K-J-1/10W
R506	ERJ6GEYJ333V	RES,M 33K-J-1/10W
R507	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R508	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R510	**ERG3FJ182**	**RES,M 1.8K-J-3W**
R511	**ERG3FJ182**	**RES,M 1.8K-J-3W**
R512	ERG2FJ392H	RES,M 3.9K-J-2W
R520	ERJ6GEYJ331V	RES,M 330-J-1/10W
R521	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R531	**ERD25FJ470P**	**RES,C 47-J-1/4W**
R532	**ERJ6ENF1002V**	**RES,M 10K-F-1/10W**
R533	**ERJ6ENF1781V**	**RES,M 1.78K-F-1/10W**
R551	**ERDS1FJ1R0T**	**RES,C 1.0-J-1/2W**
R552	ERDS1FJ1R0T	RES,C 1.0-J-1/2W
R556	ERG1SJ221P	RES,M 220-J-1W
R557	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R558	**ERQ1CKPR56S**	**RES,F .56-K-1W**
R559	ERG2FJ683H	RES,M 12K-J-2W
R561	ERG2FJ102H	RES,M 1K-J-2W
R562	ERG3FJ680H	RES,M 68-J-3W

REPLACEMENT PARTS LIST

Models: SP-2725F, SP-2725UF

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R563	ERG1SJ150P	RES,M 15-J-1W
R572	ERJ6GEYJ152V	RES,M 1.5K-J-1/10W
R605	ERDS2TJ103T	RES,C 10K-J-1/4W
R606	ERJ6GEYJ562V	RES,M 5.6K-J-1/10W
R607	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R608	ERJ6GEYJ104V	RES,M 100K-J-1/10W
R801	ERF7ZK1R5	RES,W 1.5-K-7W
R802	ERDS2TJ684T	RES,C 680K-J-1/4W
R803	ERG2FJ100H	RES,M 10K-J-1/2W
R804	ERG2FJ104H	RES,M 100K-J-2W
R805	**ERX2FZJR18H**	**RES,M .18-J-2W**
R806	**ERX2FJR56H**	**RES,M .56-J-2W**
R807	ERDS2TJ681T	RES,C 680-J-1/4W
R808	ERDS2TJ4R7T	RES,C 4.7-J-1/4W
R809	ERDS2TJ472T	RES,C 4.7K-J-1/4
R815	**ERC12ZGM825D**	**RES,S 8.2MEG-M-1/2**
R821	ERDS1FJ1R0T	RES,C 1.0-J-1/2W
R822	ERDS1FJ1R0T	RES,C 1.0-J-1/2W
R823	ERDS1FJ272T	RES,C 2.7K-J-1/2W
R824	ERDS2TJ223T	RES,C 22K-J-1/4W
R825	ERDS2TJ272T	RES,C 2.7K-J-1/4W
R828	ERJ6GEYJ104V	RES,M 100K-J-1/10W
R830	ERDS2TJ104T	RES,C 100K-J-1/4W
R831	ERDS2TJ682T	RES,C 6.8K-J-1/4W
R850	**ERQ12HJR56P**	**RES,F .56-J-1/2W**
R2201	ERJ6GEYJ224V	RES,M 220K-J-1/10W
R2203	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R2204	ERJ6GEYJ102V	RES,M 1K-J-1/10W
R2205	ERJ6GEYJ101V	RES,M 100-J-1/10W
R2206	ERJ6GEYJ273V	RES,M 27K-J-1/10W
R2301	ERQ2CJP3R9S	RES,F 3.9-J-2W
R2307	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R2350	ERDS2TJ391T	RES,C 390-J-1/4W
R2351	ERJ6GEYJ562V	RES,M 5.6K-J-1/10W
R2352	ERJ6GEYJ683V	RES,M 68K-J-1/10W
R2353	ERJ6GEYJ124V	RES,M 120K-J-1/10W
R2354	ERJ6GEYJ123V	RES,M 12K-J-1/10W
R2355	ERJ6GEYJ222V	RES,M 2.2K-J-1/10W
R2356	ERJ6GEYJ101V	RES,M 100-J-1/10W
R2357	ERJ6GEYJ472V	RES,M 4.7K-J-1/10W
R2365	ERDS2TJ102T	RES,C 1K-J-1/4W
R2370	ERJ6GEYJ103V	RES,M 10K-J-1/10W
R3001	ERDS2TJ101T	RES,C 100-J-1/4W
R3005	ERJ6GEYJ334V	RES,M 330K-J-1/10W
R3007	ERJ6GEYJ151V	RES,M 150-J-1/10W
R3008	ERJ6GEYJ151V	RES,M 150-J-1/10W
R3009	ERJ6GEYJ682V	RES,M 6.8K-J-1/10W
R3010	ERJ6GEYJ334V	RES,M 330K-J-1/10W
R3011	ERJ6GEYJ682V	RES,M 6.8K-J-1/10W
R3013	ERJ6ENF75R0V	RES,M 75.0-F-1/10W
R3014	ERJ6ENF75R0V	RES,M 75.0-F-1/10W
R3050	ERJ6GEYJ101V	RES,M 100-J-1/10W
R3051	ERJ6GEYJ101V	RES,M 100-J-1/10W
	SWITCHES	
S001	EVQPF106K	SWITCH
S002	EVQPF106K	SWITCH
S003	EVQPF106K	SWITCH
S004	EVQPF106K	SWITCH
S005	EVQPF106K	SWITCH
S008	EVQPF106K	SWITCH
S009	EVQPF106K	SWITCH
	TRANSFORMERS	
T501	**TLH15452**	**TRANSFORMER, HORIZONTAL DRIVER**
T551	**KFT4AA348F2**	**TRANSFORMER, FLYBACK**
T801	**ETS35AA5E3NC**	**TRANSFORMER**
	CRYSTALS / FILTERS	
X001	TSSA092	CRYSTAL OSCILLATOR
X002	AF080005BE	CRYSTAL
	OTHERS	
TNR001	**ENG36604GR**	**TUNER**
M001	**TSX2AA0281**	**A/C LINE CORD**
M002	**M68LGL061X**	**CRT 27”**
M003	**TJSC00300**	**CRT SOCKET**
DY	**TLY2AA006**	**DEFLECTION YOKE**
M004	JH291U-009	YOKE, CONVERGENCE
DEG	**TLK2AA0011**	**COIL, DEGAUSSING**
M005	0FMK014ZZ	CONVERGENCE CORRECTOR STRIP
M006	TMM2A30702	WEDGE, YOKE
M007	TXF3A01ZERA	ASSY., DAG GND
M008	TAS2AA0010	SPEAKER 16-OHM 3W
M009	TBX2AA1301G	BUTTON, 7-KEY
M010	TKX2A3756	GUIDE, IR
M011	TMW2A97121	STRAIN RELIEF: AC LINE CORD
M012	TKP2AA00601	SMOKED SHEET
M013	TXFKU17BSER	ASSY, CABINET BACK (Cabinet Back, Felt, Label X-Ray Warning, Label FCC, Double Insul. Label)
M014	TXFKY02FSER	ASSY, CABINET FRONT (Cabinet Front, NamePlate Quasar, Smoke Sheet, Guide IR,(2) Pad Foam, Label Service Information)
JK3001	TJB2A9064B	ASSY. JACK A/V
JK3003	TJB2AA0171	TERMINAL, S-VHS
	ACCESORIES	
M015	EUR511514	TRANSMITTER, REMOTE CONTROL
M016	UR51EC975A	BATTERY COVER, REMOTE CONTROL
M017	TQB2AA0379	MANUAL, OWNERS

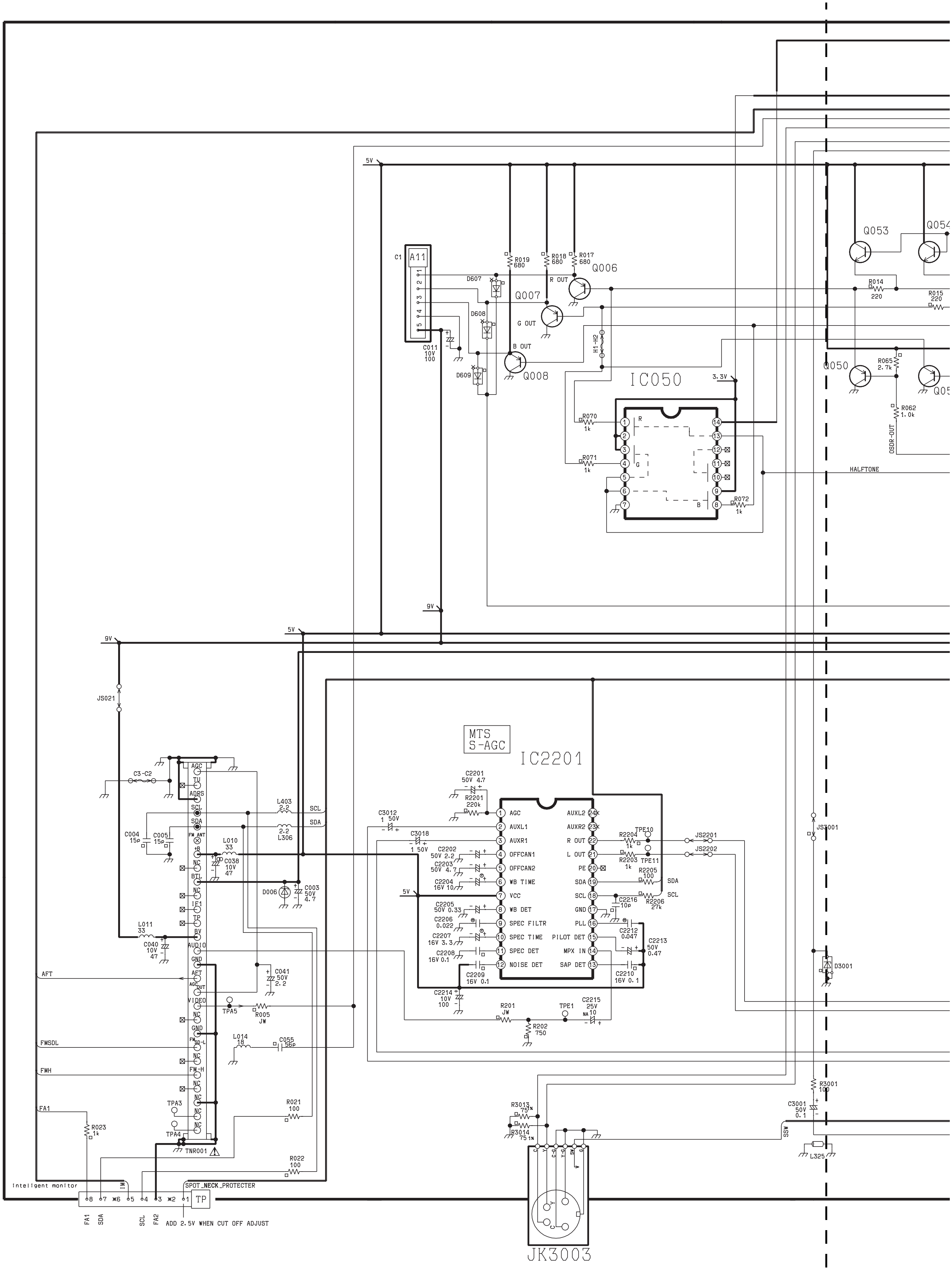
PARTS LIST ABBREVIATIONS GUIDE

RESISTOR			
TYPE		TOLERANCE	
C	Carbon	F	± 1%
F	Fuse	J	± 5%
M	Metal Oxide	K	± 10%
S	Solid	M	± 20%
W	Wire Wound	G	± 2%

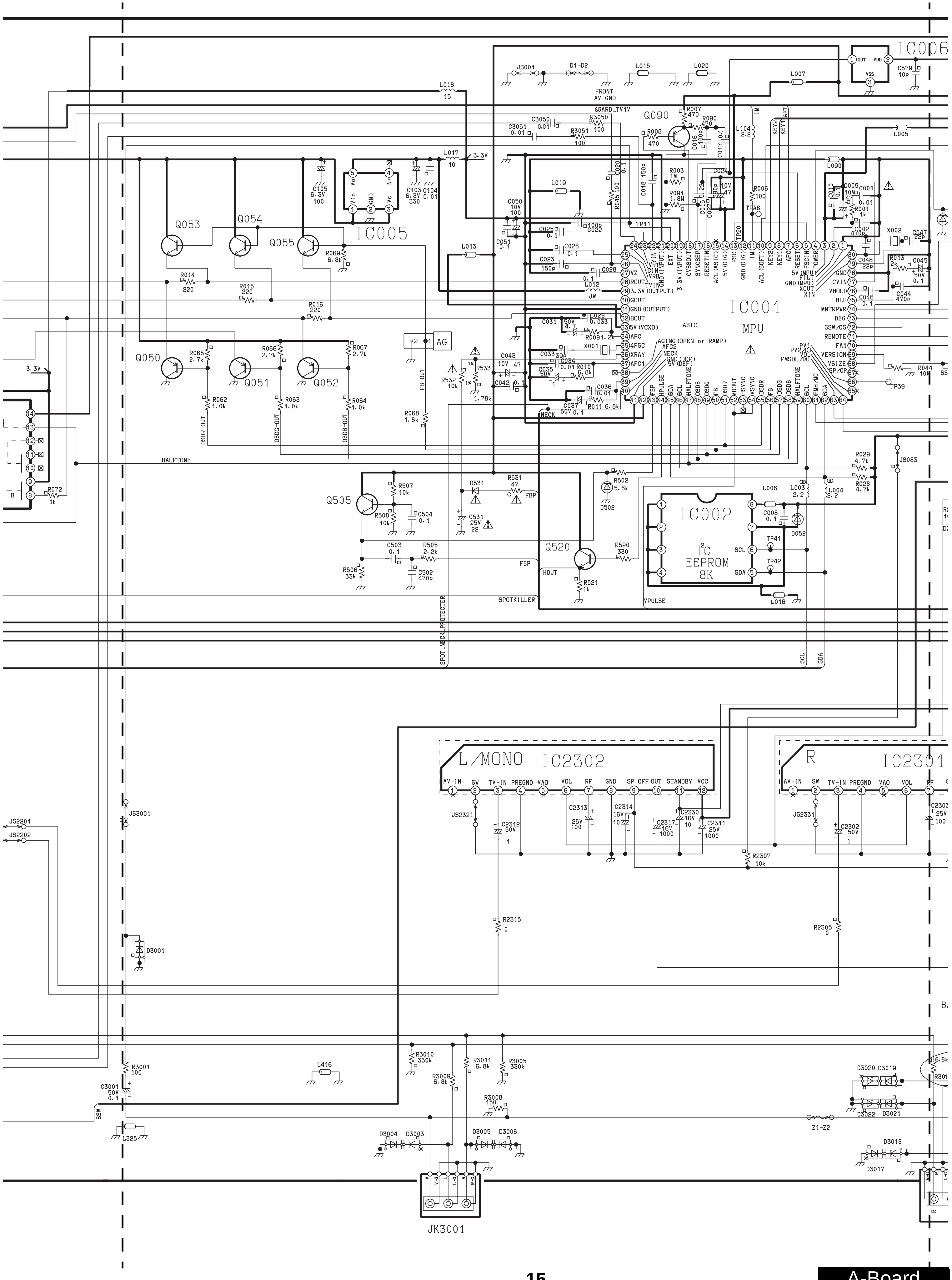
RES, C 270-J-1/4

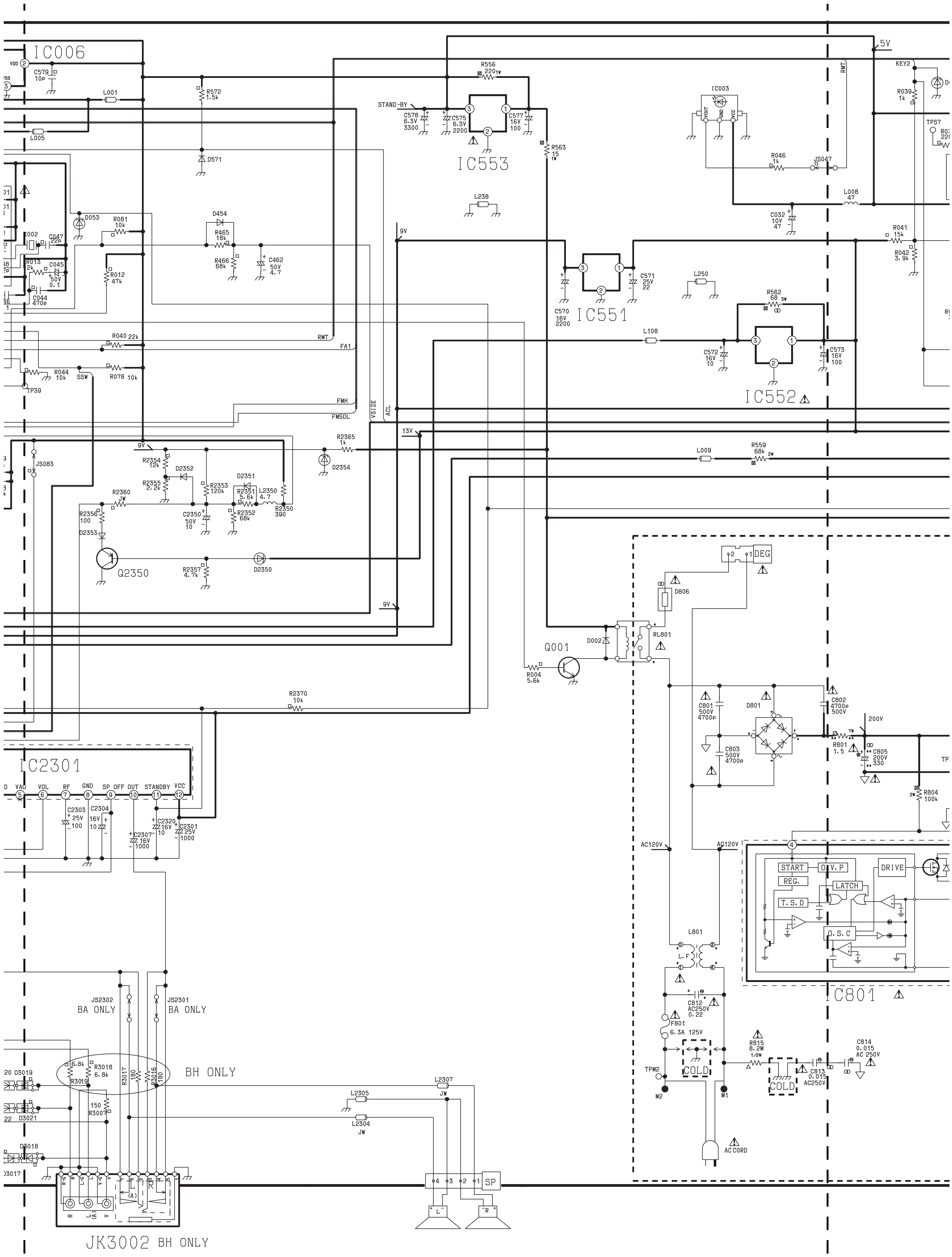
CAPACITOR			
TYPE		TOLERANCE	
C	Ceramic	C	± 0.25pF
E	Electrolytic	D	± 0.5pF
P	Polyester	F	± 1pF
S	Styrol	J	± 5%
T	Tantalum	K	± 10%
		L	± 15%
		M	± 20%
		P	+10% -0%
		Z	+80% -20%

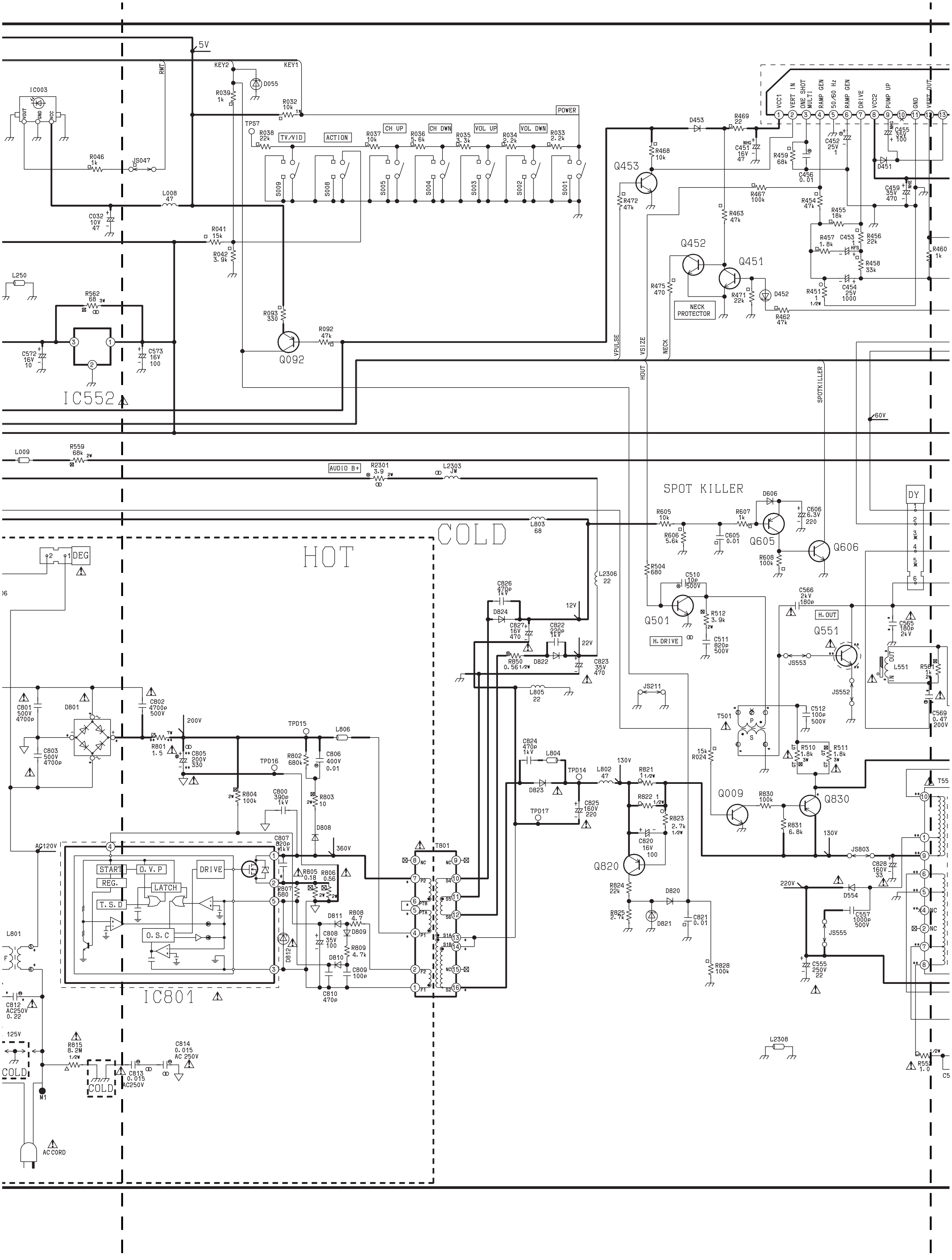
CAP, P .068UF-K-50V

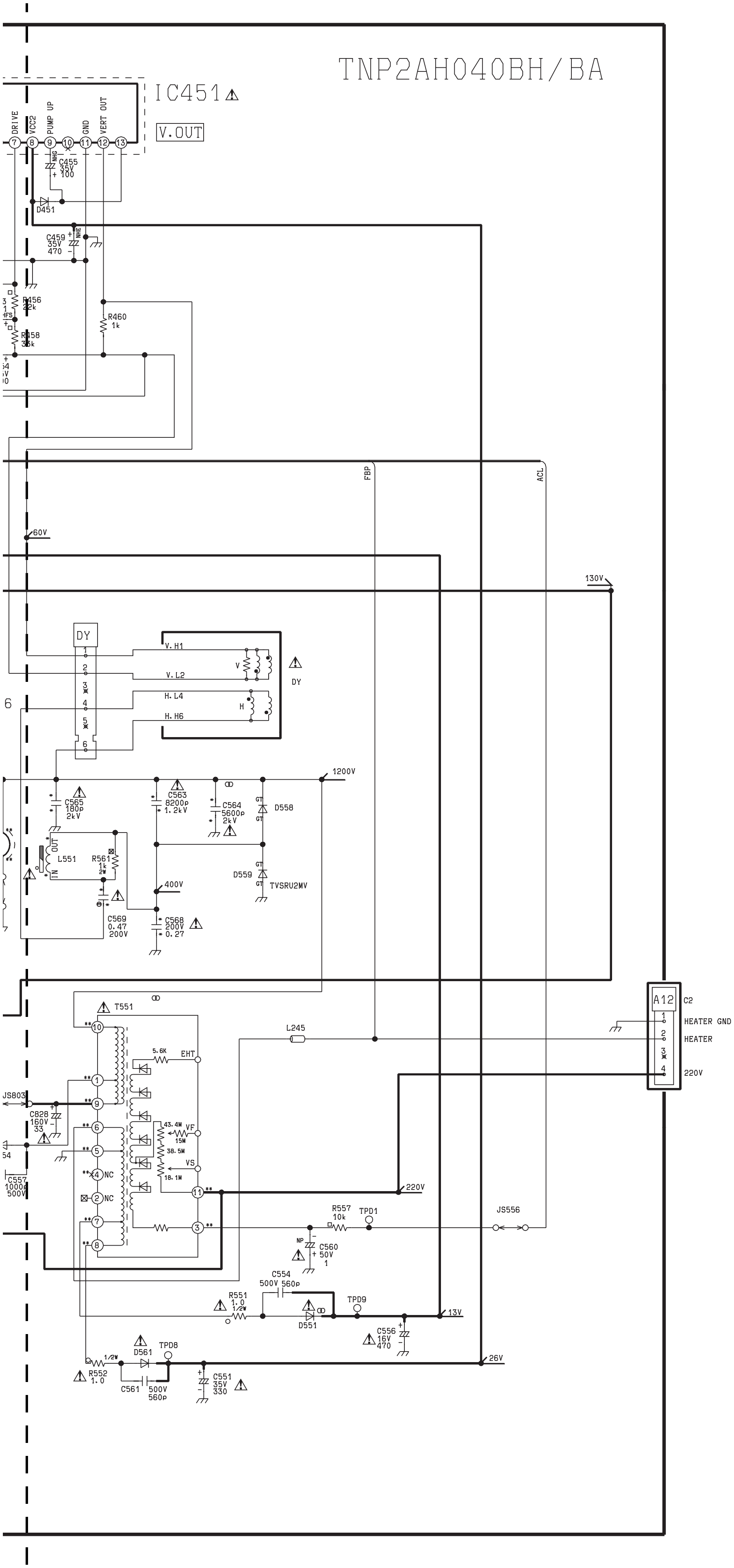


A11
C1
R019 680
R018 680
R017 680
Q006
Q007
Q008
R OUT
G OUT
B OUT
D607
D608
D609
C011 10V 100
H1-H2
IC050
3.3V
R070 1k
R071 1k
R072 1k
Q053
Q054
Q050
R014 220
R015 220
R065 2.7k
R062 1.0k
OSDR-OUT
HALFTONE
5V
9V
JS021
MTS
S-AGC
IC2201
C2201 50V 4.7
R2201 220k
C3012 1 50V
C3018 1 50V
AGC
AUXL1
AUXR1
OFFCAN1
OFFCAN2
WB TIME
VCC
WB DET
SPEC FILTR
SPEC TIME
SPEC DET
NOISE DET
AUXL2
AUXR2
R OUT
L OUT
PE
SDA
SCL
GND
PLL
PILOT DET
MPX IN
SAP DET
C2202 50V 2.2
C2203 50V 4.7
C2204 16V 10
C2205 50V 0.33
C2206 0.022
C2207 16V 3.3
C2208 16V 0.1
C2209 16V 0.1
C2210 16V 0.1
C2212 0.047
C2213 50V 0.47
C2214 10V 100
C2215 25V 10
C2216 10P
R2203 1k
R2204 1k
R2205 100
R2206 27k
TPE10
TPE11
TPE1
JS2201
JS2202
R201 JW
R202 750
JS3001
D3001
R3001 100
C3001 50V 0.1
L325
SSW
R3013 75
R3014 75
JK3003
C3-C2
C004 15P
C005 15P
L403 2.2
L306 2.2
L010 33
C038 10V 47
D006
C003 50V 4.7
L011 33
C040 10V 47
C041 50V 2.2
TPA5
R005 JW
L014 18
C055 56P
TPA3
TPA4
R021 100
R022 100
R023 1k
TNR001
AFT
FMSDL
FMH
FA1
SCL
SDA
AGC
TU
ADRS
FM ANT
+B
NC
BTL
IF1
TP
BV
AUDIO
GND
VIDEO
Intelligent monitor
SPOT_NECK_PROTECTER
TP
FA1
SDA
SCL
FA2
ADD 2.5V WHEN CUT OFF ADJUST


IC001
MPU
ASIC
IC002
I²C EEPROM 8K
IC005
IC006
L/MONO IC2302
R IC2301
Q053
Q054
Q055
Q050
Q051
Q052
Q090
Q505
Q520
JK3001
HALFTONE
SPOTKILLER
VPULSE
HOUT
FBP
NECK
SPOT_NECK_PROTECTER
FB-OUT
OSDR-OUT
OSDG-OUT
OSDB-OUT
AG
FRONT AV GND
3.3V
D3001
JS3001
L416
L325
SSW
Z1-Z2


IC006
IC553
IC551
IC552
IC003
IC2301
IC801
Q001
Q2350
RL801
D801
L801
F801
6.3A 125V
DEG
5V
9V
13V
200V
AC120V
STAND-BY
RMT
FA1
FMH
FMSDL
VSIZE
ACL
KEY2
SSW
START
O.V.P
DRIVE
REG.
LATCH
T.S.D
O.S.C
COLD
AC CORD
JS2302
BA ONLY
JS2301
BA ONLY
BH ONLY
SP
JK3002 BH ONLY


5V
RMT
KEY2
KEY1
D055
R039 1k
R032 10k
POWER
TPS7
R038 22k
TV/VID
ACTION
R037 10k
CH UP
R036 5.6k
CH DWN
R035 3.3k
VOL UP
R034 2.2k
VOL DWN
R033 2.2k
S009
S008
S005
S004
S003
S002
S001
IC003
R046 1k
JS047
L008 47
C032 10V 47
R041 15k
R042 3.9k
L250
R562 68 3W
C572 16V 10
C573 16V 100
IC552
R093 330
R092 47k
Q092
D453
R469 22
VCC1
VERT IN
ONE SHOT MULTI
RAMP GEN
50/60 Hz
RAMP GEN
DRIVE
VCC2
PUMP UP
GND
VERT OUT
C451 16V 47
R459 68k
C452 25V 1
C455 35V 100
D451
R468 10k
Q453
C456 0.01
R467 100k
R472 47k
R454 47k
R455 18k
C459 35V 470
R463 47k
R457 1.8k
C453 1
R456 22k
R460 1k
Q452
Q451
R458 33k
R475 470
R471 22k
D452
R451 1
C454 25V 1000
R462 47k
NECK PROTECTOR
VPULSE
VSIZE
NECK
HOUT
SPOTKILLER
60V
L009
R559 68k 2W
AUDIO B+
R2301 3.9 2W
L2303 JW
SPOT KILLER
D606
R605 10k
R607 1k
C606 6.3V 220
R606 5.6k
C605 0.01
Q605
Q606
R608 100k
DY
COLD
HOT
L803 68
DEG
L2306 22
R504 680
C510 10p 500V
C826 470p 1kV
D824
12V
Q501
R512 3.9k
C566 2kV 180p
H.OUT
C827 16V 470
C822 220p 1kV
22V
H.DRIVE
C511 820p 500V
Q551
C565 180p 2kV
R850 0.56
D822
C823 35V 470
JS553
L551
C801 500V 4700p
D801
C802 4700p 500V
L805 22
JS211
JS552
C512 100p 500V
T501
C569 0.47 200V
200V
R801 1.5
C805 200V 330
TPD15
L806
C803 500V 4700p
R802 680k
C806 400V 0.01
TPD16
C824 470p 1kV
L804
130V
R024 15k
R510 1.8k 3W
R511 1.8k 3W
R804 100k
C800 390p 1kV
R803 10
D823
TPD14
L802 47
R821 1
T55
C825 160V 220
R822 1
R823 2.7k
Q009
R830 100k
Q830
TPD17
D808
R831 6.8k
130V
AC120V
C807 820p 1kV
360V
T801
C820 16V 100
JS803
START
O.V.P
DRIVE
REG.
LATCH
T.S.D
O.S.C
R805 0.18
R806 0.56
Q820
C828 160V 33
R807 680
220V
D554
R808 4.7
D811
D809
R824 22k
D820
C808 35V 100
R809 4.7k
R825 2.7k
D821
C821 0.01
C557 1000p 500V
L801
D812
D810
C809 100p
JS555
C555 250V 22
R828 100k
C810 470p
C812 AC250V 0.22
IC801
125V
R815 8.2M
C814 0.015 AC 250V
C813 0.015 AC250V
L2308
R55
COLD
M1
AC CORD

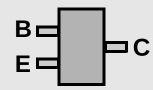

TNP2AH040BH/BA
IC451
V.OUT
DRIVE
VCC2
PUMP UP
GND
VERT OUT
C455 35V 100
D451
C459 35V 470
R456 22k
R458 33k
R460 1k
FBP
ACL
60V
130V
DY
V.H1
V.L2
H.L4
H.H6
1200V
C565 180p 2kV
C563 8200p 1.2kV
C564 5600p 2kV
D558
L551
R561 1k 2W
D559
TVSRU2MV
400V
C569 0.47 200V
C568 200V 0.27
T551
L245
A12
C2
HEATER GND
HEATER
220V
EHT
VF
VS
JS803
C828 160V 33
C557 1000p 500V
R557 10k
TPD1
JS556
C560 50V 1
C554 500V 560p
R551 1.0 1/2W
TPD9
D551
13V
C556 16V 470
D561
TPD8
R552 1.0
C561 500V 560p
C551 35V 330
26V

Schematic Notes

IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

CHIP TRANSISTOR LEAD DESIGNATION



SCHEMATIC NOTES

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ; Test point but no pin .
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol indicates **HOT GROUND CONNECTION**; indicates COLD GROUND.

NOTE: *All other component symbols are used for engineering design purposes.*

VOLTAGE MEASUREMENTS

1. Voltage measurement:
   - AC input to the Receiver is 120V. NTSC (HD, 1125i & 525P when applicable) signal generator is connected to the antenna of the Receiver. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min.
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol indicates ground lead connection of meter.
   Incorrect ground connection will result in erroneous readings.

CAUTION: ***Incorrect ground connection of the test equipment will result in erroneous readings.***

WAVEFORM MEASUREMENTS

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to “MIN”.
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: *Incorrect ground connection of the test equipment will result in erroneous readings.*

Important notice:

Values for components noted in schematics are subject to change without any notice or obligation, so please check parts list for component value or part number

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